

# Combine Rough Set Theory, Support Vector Machine and the Optimization Algorithm Model in Customer Relationship Management

林東毅、賴?民；白炳豐

E-mail: 9507395@mail.dyu.edu.tw

## ABSTRACT

This research combine the Rough Set Theory, Support Vector Machine, and the Particle Swarm Optimization algorithms and apply to customer relationship management. Three steps are included : (1) Using rough set theory identify key attributes, (2) Using Support Vector Machine to increase the classification performance of RST, (3) Using Particle Swarm Optimization search the parameters (C, ) of Support Vector Machine. Data of the credit card questionnaire are used to verify the hybrid model. Finally, two other models, Back-Propapation Neural Network, Discriminant Analysis are used to demonstrate the classification performance of the proposed model. Experimental results show that the proposed model outperforms the other two approaches.

Keywords : customer relationship management ; rough set theory ; support vector machine ; particle swarm optimization ; back-propapation neural network ; discriminant analysis

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